

REMARKS

Applicant respectfully requests reconsideration of the present U.S. application as amended herein. Claims 7 and 14 have been amended to include the limitation of the probe pins being rigid. The support for these amendments can be found in the Detailed Description section of the current application at page 6, line 18. No new subject matter has been added with these amendments. Thus, claims 1-20 remain pending.

A. Disclosure Objection: Summary of invention missing

The Office Action requested that Applicants add a "Summary of the Invention" description to the application. However, Applicants would like to kindly point out that both the M.P.E.P. and 37 C.F.R. §1.73 do not require the presence of a "Summary of the Invention" in a patent application. They merely indicate where in the application the "Summary of the Invention" should be placed if Applicants were to elect to include one.

In particular, 37 C.F.R. §1.73 only states that "[a] brief summary of the invention ... should preclude the detail description." 37 CFR § 1.73 does not state "must" or "shall." Accordingly, Applicants have elected not to include a "Summary of the Invention" as this is within the discretion of Applicants.

B. Claim Objection-Claim 14

Claim 14 has been objected to for an informality. Applicant has amended claim 14 to correct this informality. Therefore, reconsideration and withdrawal of the objection are respectfully requested.

C. 35 U.S.C. § 102(b)

Frederickson, et al. - Claims 7 and 14.

Claims 7 and 14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,955,888 issued September 21, 1999 to Toby Frederickson, et al. (hereinafter “the Frederickson patent”) (Office Action, pages 2-3). For at least the reasons set forth below, Applicant submits that claims 7 and 14 are not anticipated by the Frederickson patent.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Independent claims 7 and 14 have been amended to describe a plurality of rigid probe pins. The Official Action at page 3 states that the Frederickson patent discloses a “plurality of probe pins 620 extending between said housing first surface and said housing second surface.” However, the probe pins disclosed in the Frederickson patent are actually spring loaded pogo pins (col. 6, line 11). Thus, the Frederickson patent teaches a non-rigid probe array.

Therefore, as the Frederickson patent does not teach or disclose a plurality of rigid probe pins, reconsideration and withdrawal of the Section 102(b) rejection of claims 7 and 14 are respectfully requested.

D. 35 U.S.C. § 103(a)

Frederickson - Claim 1-2, 5-9, 12-13, 15-16, and 19-20

Claims 1-2, 5-9, 12-13, 15-16, and 19-20 stand rejected under 35 U.S.C. § 103(a) as being obvious over the Frederickson patent (Office Action, page 4). For at least the reasons set forth below, Applicant submits that the claims 1-2, 5-9, 12-13, 15-16, and 19-20 are not rendered obvious by the Frederickson patent.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Frederickson - Claims 1-2 and 5-6

With regard to claims 1-2 and 5-6, the Office relies on the Frederickson patent (Fig. 6B) for a teaching of a "plurality of probe pins 620 each further include(ing) a leading end having a taper 626." (Office Action, page 3). The Office contends that it would have been obvious to choose an appropriate range of taper under *In re Aller* (Office Action, page 4). The Frederickson patent teaches probe pin piercing of a BGA solder ball, stating that "each tip 626 is a single pointed tip which pierces the outer surface of the solder ball 126" (col.8 line 36). The tapering of the probe pin tip in the Frederickson patent facilitates the piercing of an oxidation or contaminant

layer on the surface of a solder ball, in order to provide reliable electrical contact between the pogo pins and the solder ball (col 8, line 35-41). Such tapering is also related to the sloughing off of adhered contaminants that are “pushed along the tapered portion of the tip 626 such that the contaminant is formed into an annular ring which eventually fractures and falls away.” (col 8, line 46-48). Thus, the tapering of the probe pin in the Frederickson patent facilitates breaking through an oxidation or contamination layer in a solder ball, as well as providing a surface for contaminants to be pushed along in order avoid contaminant build up on the surface of the probe tip.

Claim 1 of the present invention discloses a “plurality of probe pins each further include(ing) a leading end having a taper between about 10 and 25 degrees.” The applicant discloses that a “specific tapering is selected to allow the probe pin to be inserted into the electrical socket opening without catching on the socket or bending. The tapered leading ends 122 allows a margin of error and self-alignment while sliding into the socket opening” (Detailed Description section of the current application at page 6, lines 7 through 11). Thus the probe pin of the present invention is specifically designed for testing an electrical socket, wherein the probe pin tip is tapered in order to facilitate insertion into such an electrical socket (Detailed Description, page 6 line 5-11).

“In order to rely on a reference as a basis of rejection for an applicant’s invention, the reference must either be in the field of the applicant’s endeavor or, if not, be reasonably pertinent to the particular problem with which the invention concerned.” *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). (See M.P.E.P. 2141.01(a)). The Frederickson patent involves a different field of endeavor since it teaches the use of the probe pin in a different

structure, (a solder ball), for a different purpose (breaking through a contaminant layer and providing a surface for sloughed off contaminants), and is not reasonably pertinent because a person having reasonable skill in the art would not expect to solve the problem of probe pin insertion into an electrical socket by considering a reference dealing with probe pin piercing of a solder ball. Therefore, the Frederickson patent does not suggest or motivate an appropriate range of taper for inserting a probe pin into an electrical socket, and thus claim 1 is not rendered obvious by the Frederickson patent.

If an independent claim is nonobvious, then any claim depending from the independent claim is also nonobvious. *In re Fine*, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1998). Because dependent claims 2 and 5-6 depend from claim 1, Applicant submits that claims 2 and 5-6 are not rendered obvious by the Frederickson patent. Therefore, reconsideration and withdrawal of the Section 103(a) rejection of claims 1-2 and 5-6 are respectfully requested.

Frederickson - Claims 7-9, 12-13, 15-16, and 19-20

Claims 8-9, 12-13, 15-16, and 19-20 depend from either independent claim 7 or independent claim 14; therefore, all of the responses with regard to the Section 102(b) rejection of claims 7 and 14 are equally applicable to the present rejection of claims 8-9, 12-13, 15-16, and 19-20 and are hereby incorporated herein by reference as though repeated in total.

As stated above, independent claims 7 and 14 have been amended to describe a plurality of rigid probe pins. Claims 8-9, 12-13, 15-16 and 19-20 depend from claims 7 and 14 respectively, and as such contain all of the limitations of the independent claim from which they depend. The Frederickson patent only teaches a "plurality of probe pins 620." However, the

probe pins disclosed in the Frederickson patent are actually spring loaded pogo pins, not a rigid probe array, as presently claimed.

Furthermore, claims 8-9 and 15-16 rely on the Frederickson patent (Fig. 6B) for a teaching of a “plurality of probe pins 620 each further include(ing) a leading end having a taper 626.” The Office contends that it would have been obvious to choose an appropriate range of taper under *In re Aller* (Office Action, page 4). As stated above, the Frederickson patent involves a different field of endeavor for a different purpose, and does not suggest or motivate an appropriate range of taper for inserting a probe pin into an electrical socket.

Because the Frederickson patent does not teach or disclose a plurality of rigid probe pins, and further does not suggest or motivate an appropriate range of taper for inserting a probe pin into an electrical socket, the Frederickson patent does not render claims 7-9, 12-13, 15-16, and 19-20 obvious. Therefore, reconsideration and withdrawal of the Section 103(a) rejection of claims 7-9, 12-13, 15-16, and 19-20 are respectfully requested.

Frederickson in view of William Lee Oates- Claims 3-4, 10-11, 17-18

Claims 3-4, 10-11, and 17-18 stand rejected under 35 U.S.C. § 103(a) as being obvious over the Frederickson patent in combination with U.S. Patent No. 3,599,093 issued August 10, 1971 to William Lee Oates, (hereinafter “the Oates patent”) (Office Action, page 5).

Claims 3-4, 10-11 and 17-18 depend from independent claims 1, 7, and 14; therefore, all of the responses with regard to the Section 103(a) rejection of claim 1 are equally applicable to the present rejection of claims 3-4 and are hereby incorporated herein by reference as though repeated in total. In addition, all of the responses with regard to the Section 102(b) rejection of

claims 7 and 14 are equally applicable to the present rejection of claims 10-11 and 17-18 and are hereby incorporated herein by reference as though repeated in total.

The Office Action relies on the Oates patent for a teaching of “wherein a plurality of probe pins each comprises steel coated with gold” (Office Action, page 5). However, the Oates patent does not overcome the deficiencies of the Frederickson patent regarding the obviousness of the range of taper, therefore claims 3 and 4 are patentable over the Frederickson patent in light of the Oates patent.

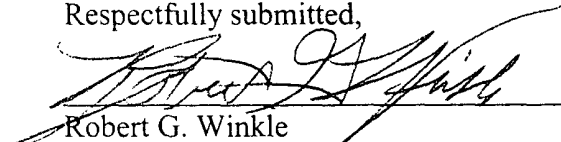
In addition, as discussed above with respect to the 103(a) rejection of claims 7 and 14 from which 10-11 and 17-18 depend respectively, the Frederickson patent does not teach or disclose a plurality of rigid probe pins, and as such does not teach all of the limitations of claims 10-11 and 17-18; therefore claim 10-11 and 17-18 are not rendered obvious under the Frederickson patent. The Oates patent does not overcome the deficiencies of the Frederickson patent regarding the limitations of rigid pins as Oates only teaches or suggests spring-biased probe pins. (See Fig. 8). Therefore, claims 10-11 and 17-18 are patentable over the Frederickson patent in light of the Oates patent.

In view of the foregoing remarks, the Applicants request allowance of the application.

Please forward further communications to the address of record. If the Examiner needs to contact the below-signed attorney to further the prosecution of the application, the contact number is (503) 712-1682.

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Respectfully submitted,



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VERSION OF CLAIMS WITH MARKINGS

IN THE CLAIMS:

7. (Amended) A probe pin array, comprising:
- a housing having a first and a second surface;
 - a plurality of rigid probe pins extending between said housing first surface and said housing second surface, wherein said plurality of rigid probe pins extend substantially perpendicularly from said housing second surface; and
 - at least one alignment guide extending from said housing second surface having at least one chamfered surface oriented toward said plurality of rigid probe pins.
14. (Amended) A probe pin array, comprising:
- a housing having a first and a second surface;
 - a carrier having a first surface and a second surface, wherein said carrier second surface abuts said housing first surface;
 - a plurality of rigid probe pins extending between said housing first surface and said housing second surface and extending between said housing first surface and said housing second surface, wherein said plurality of rigid probe pins extend substantially perpendicularly from said housing [said] second surface; and
 - at least one alignment guide extending from said housing second surface having at least one chamfered surface oriented toward said plurality of rigid probe pins.